

# (12) UK Patent Application (19) GB (11) 2 155 793 A

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US 3674265

(58) Field of search

A6D

(54) Scrummage trainer

(57) A scrumage trainer with a spring-loaded pad carrier (11) that has guide means (13,14,2,3) for linear movement transversely to a substantially horizontal axle (8) about which it can pivot, and spring-loading means (8,10,18,19) to resist the component of thrust applied by a user to a pad (12) on the carrier that is directed through the pivotal axis (X-X).

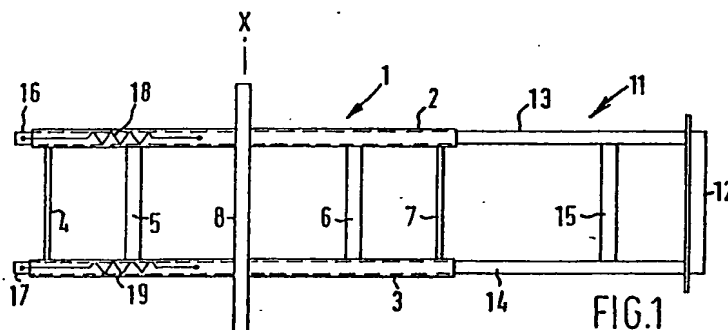


FIG.1

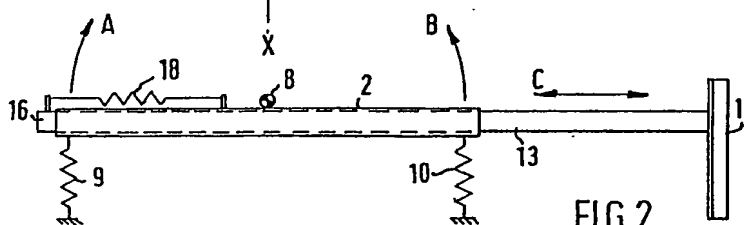
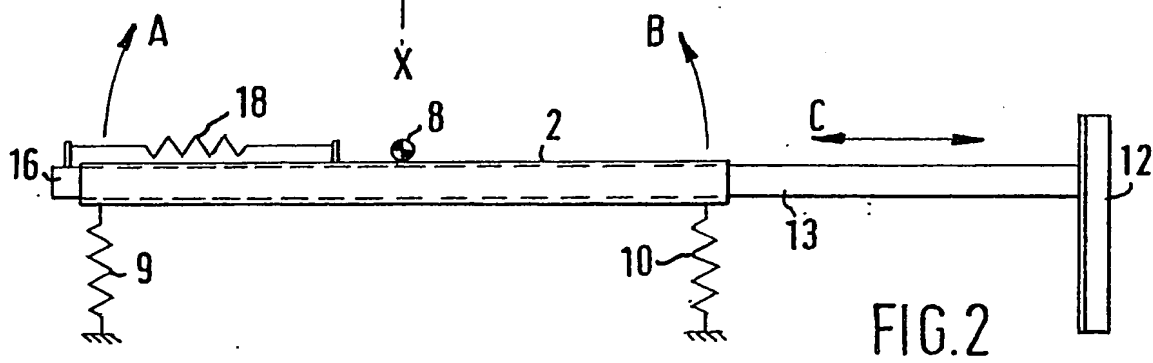
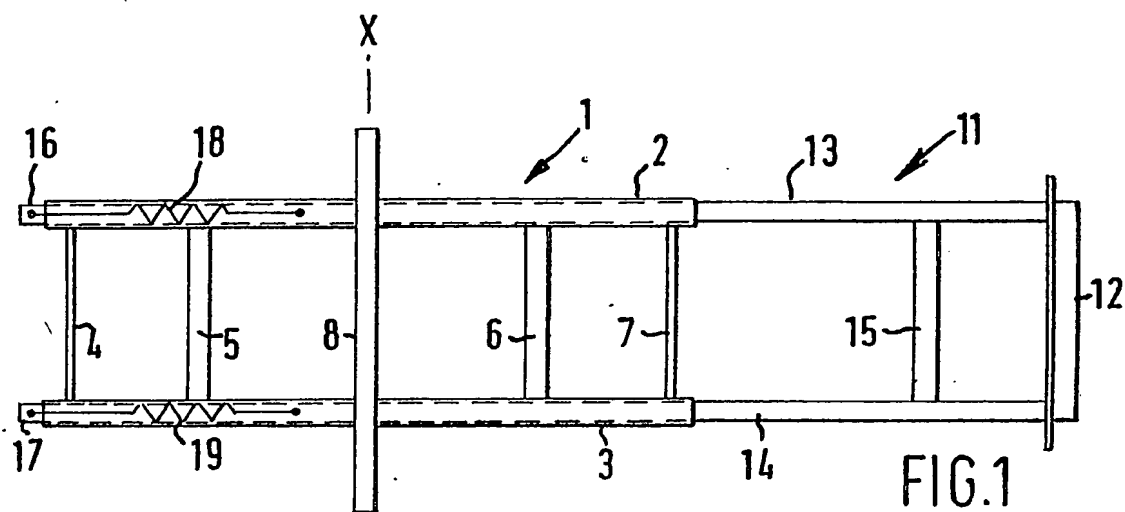


FIG.2



## SPECIFICATION

## Scrummage trainer

5 This invention relates to training apparatus for Rugby Football and like games and particularly is a development of the scrummage trainer described in United Kingdom Patent Specification No. GB 2 118 843 A.

10 One of the embodiments that is, in effect, described in the aforesaid specification is a pad carrier mounted on a vehicle to pivot about a substantially horizontal axis, the pad carrier being spring-loaded to resist the upwards or downwards component of a thrust applied to a pad by a user. This form of trainer necessarily includes a vehicle, a sled or with rollers, as provision has to be made for the vehicle to move back as a thrust is applied to the pad carrier.

20 It is an object of the present invention to provide a scrummage trainer that not only enables a prop forward to thrust against a pivotal pad carrier with the upwards or downwards component of his thrust being resisted but so resistively accommodate generally horizontal thrusts.

25 According to the present invention a scrummage trainer has a pad carrier guided for linear movement transversely to a substantially horizontal axis about which it can pivot, the pad carrier being spring-loaded to resist the component of a thrust applied by a user to a pad on the carrier that is directed through the pivotal axis.

30 In an embodiment of the invention the pad carrier is guided and supported by a support frame that is mounted to pivot about said horizontal axis, the pad carrier being spring-loaded with respect to the support frame and the support frame being spring-loaded with respect to the trainer so as to resist a thrust applied by a user so that the resultant of the opposing spring loads is directly opposed to a user thrust applied in an arcuate range of directions.

35 Any of the scrummage trainers described in the aforesaid specification can readily be converted to accord with the present invention and thus allow a prop forward to push against an adjustable and measurable resistance that would push the forward back if his thrust is not maintained. This permits a trainer to be used statically by placing it against a wall or tree, or having it ballasted so that it will not move. The machine can be used indoors or in a limited space. The invention is also ideal for developing the 'snap shove' and for assessing strength.

40 The above and other features of the present invention are illustrated in the Drawing wherein Figures 1 and 2 are, respectively, a plan and a side elevation of part of a scrummage trainer in accordance with the invention.

45 As shown by the drawings, a ladder-shaped support frame 1 has rectangular, hollow, longitudinally extending side members 2 and 3 joined by cross-braces 4, 5, 6 and 7. An axle 8 is also attached transversely to the frame at the midlength thereof and pivots about a substantially horizontal axis X-X. The axle is journaled to the structure (not

shown) of the trainer, (for example, the axle could replace the fulcrum pins 16 and 17 that are inserted through uprights 18 of the trainer shown by Figure 1 of specification No. GB 2 118 843 A).

70 Springs 9 and 10 are attached between the frame ends and the trainer and act to resist pivotal movement of the frame in the directions of arrows A and B respectively.

75 A pad carrier 11 has at one end a pad 12, for a prop forward to push against, and consists of a pair of rectangular side arms 13 and 14 that are a sliding fit within the frame side members 2 and 3 respectively. The carrier 11 is also cross-braced at 15. The side arm ends 16 and 17 remote from the pad end of the carrier protrude from the frame side members 2 and 3 respectively and are each attached to one end of a spring 18 or 19, the other ends of which are anchored to a respective side member 2 or 3.

80 All the springs 9, 10, 18, 19 are linear tension springs, shock cord being a convenient material.

85 The action of the apparatus is as follows:- a thrust on pad 12 will, depending on its direction, force the carrier to move longitudinally (in the direction of arrow c) into the support frame against the loading of springs 18 and 19, and if the thrust is not horizontal, the support frame will also pivot up or down against the loading of spring 10 or spring 9, by this means a thrust on pad 12 from an arcuate range of directions will meet a spring-loaded resistance against both the vertical and the horizontal components of the thrust.

90 Thus some of the requirements for scrummage training can be met by an essentially static piece of apparatus.

95 As, irrespective of the direction of thrust, the thrust directed through the pivotal axis X-X is solely resisted by springs 18 and 19, such thrust can be consistently measured by means of graduations marked on one of the side arms 13, 14.

100 On removal or diminution of the applied thrust, the support frame will return to its horizontal rest position and the pad carrier to its longitudinally extended rest position.

105 Spring strength and user strength will, clearly, affect the performance of the training apparatus. In an embodiment of the invention, damper means are connected between the pad carrier and the support frame to control relative movement therebetween. The damper primarily acts to slow the return of the pad carrier to its extended rest position, this being to prevent the 'snap-back' effect of the shock cord springs from harming the front row of a training scrum, who could be squashed between the returning carrier and the rest of the scrum behind them. Preferably, the damper or dampers have different rates in either direction of action and are adjustable so that their overall rates can be varied.

## CLAIMS

1. A scrummage trainer including a spring-loaded pad carrier having guide means for linear movement transversely to a substantially horizon-

tal axle, about which it can pivot, and spring-loading means to resist the component of a thrust applied by a user to a pad on the carrier that is directed through the pivotal axis.

- 5 2. A trainer as claimed in claim 1, wherein the pad carrier is guided and supported by a support frame that is mounted on the axle to pivot about the horizontal axis, spring-loaded means being provided between the carrier and the support
- 10 frame and further spring-loading means being provided between the support frame and the trainer so as to resist a thrust applied by a user, to a pad on the carrier, so that the result of the spring-loading is directly opposed to a user thrust applied in
- 15 an arcuate range of directions.

3. A trainer as claimed in Claim 2, wherein the support frame has a pair of hollow, longitudinally extending side members and the pad carrier has a pair of side arms to slide within and be linearly
- 20 guided by the side frames.

4. A trainer as claimed in Claim 3, wherein tension springs are connected with one end of each tension spring connected to a respective one of the support frame side members and the other end of
- 25 each tension spring anchored to a respective one of the pad carrier side arms.

5. A trainer as claimed in Claim 2, wherein damper means are connected between the pad carrier and the support frame to control relative
- 30 movement therebetween.

6. A scrummage trainer substantially as described with reference to or as shown by the Drawings.